

## Building a Better Car Alarm



*Analog Devices' ADXL313 can help detect unauthorized towing (left) or tilting (right) of the vehicle and sound the alarm.*

According to the National Insurance Crime Bureau (NICB), nearly 700,000 vehicles were stolen in the US in 2013. One of the most popular methods of auto theft is to steal a vehicle by simply towing it away. Conventional car alarms do not protect against this. Shock sensors cannot measure changes in inclination, and ignition-disabling systems are ineffective. This deficiency can be overcome by using a high-resolution accelerometer to detect changes in inclination. The ADXL313 3-axis low-g accelerometer is perfectly suited for this application, detecting inclination changes of as little as  $0.1^\circ$ . If the accelerometer measures such an inclination change, the alarm is sounded – hopefully scaring off the would-be thief.

Beyond high resolution, robust temperature stability is required as no one wants their car alarm to go off because of changes in the weather, making the highly stable ADXL313 an ideal choice. The ADXL313 is the successor to the ADXL312 and offers improved RMS noise and micro-linearity. This device is currently in production in both OEM and aftermarket automotive anti-theft systems.

In addition to car alarm systems, the ADXL313 is used in a variety of other OEM applications, including event data recorders (black boxes), eCall systems, and automatic lift gates. Additionally, the part is used in motorcycle-specific applications such as headlight stabilization and tip detection.

For more information, including the ADXL313 datasheet, please visit <http://www.analog.com/en/products/mems/mems-accelerometers/adxl313.html>